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PROVISION FOR GIFTED CHILDREN IN PUBLIC SCHOOLS[1]

J. H. VAN SICKLE
Superintendent of Schools, Baltimore, Maryland

During the past decade much attention has been given in public-school systems to the problem of the backward, delinquent, and defective children who clog the lower grades of our schools and retard the progress of the children of normal mentality. Their presence in ordinary classes imposes upon the teacher the necessity of devoting an undue portion of time and attention to the few from whose education society will benefit least, to the disadvantage of the many who can better profit by the instruction given; and hence it has come about that in many city-school systems special classes are provided for children of subnormal intellect in which they may receive an education suited to their peculiar needs. This is good policy for two reasons: every such child has a right to enough education to make him as useful as the limitation of his natural endowment will permit; and economy in administration is observed by so much segregation of the backward as will permit the teaching of normally constituted children in reasonably large classes. This cannot be done in a manner fair to the children in our schools when 50 per cent. of the teacher's time and energy must be given to 5 per cent. of the children in the class. So the movement for special classes for the few—possibly 2 per cent. of the whole number—who cannot

[1] Paper read before the Department of Superintendence of the National Education Association, March, 1910.

profit by instruction as given under ordinary school conditions is undoubtedly in the right direction. I would go farther and say that another group of children, numbering possibly 8 or 10 per cent. of the whole school enrollment, intermediate in mental grasp between the extreme cases and the great body of average children, should receive such individual attention as cannot be given in large classes. It does not fall to my lot today to discuss the proper handling of these two groups of children, but I desire to leave no doubt in your minds as to the very great importance which I attach to the proper instruction of the slower children. Most of them will later develop marked strength, and it is by no means safe to conclude that the slow child of today will be the slow child two years hence.

The topic assigned to me assumes that there are children at the other extreme of ability for whom also special provision should be made. These are the pupils of more than ordinary power who should not be restricted to exactly the same curriculum nor held to the moderate pace which is necessarily set by the ability to progress shown by the great body of children. President Eliot has often called attention to the importance of discovering these capable individuals and giving them opportunities commensurate with their abilities, so that society may use them "to lift the whole population to a higher plane of intelligence, conduct, and happiness." Theoretically, most people are willing to admit that the general tendency in a democracy is to bring all men to a common level; that the level toward which we tend is the level of the average intelligence rather than that exemplified in the genius; and that the only way to lift the whole population is to develop capable individuals to take the lead in the lifting. It cannot be denied that the graded school system, by its tendency toward uniformity, has operated toward making us satisfied with a medium level of attainment. Undoubtedly, one of its effects has been to raise many individuals to a higher level than they might otherwise have attained, and this is good; but, on the other hand, it has made many other individuals satisfied with lower attainments than those of which they were capable, and this is not good. It is not easy to break the "cake

of custom" that fifty years of uniformity have created; but now that such signal process has been made in the proper education of children at the lower levels of ability, we may hope for at least equally valuable results from special attention to children of exceptionally strong mental endowment. For the purpose of this discussion these children are spoken of as "gifted." By the gifted child we do not mean the genius in the sense of which Mr. Galton uses the term. We refer to a more numerous class of children endowed with somewhat more of intellectual power and energy than the great mass of children in our schools. Of course there is no clear-cut line of division anywhere between the various groups. They shade into each other, and we shall often be in doubt as to the group in which a child belongs; but even under such circumstances there is a gain for education, because we shall sooner so've a problem by recognizing it as a problem than by ignoring it altogether. Statistics are available showing about how many subnormal children there are among every one thousand, but we do not know how many gifted children there are among every one thousand children born into the world. We do not know because we have not been looking for them. Under the operation of school attendance laws, instead of easily getting rid of the dullards and laggards, as we too often formerly did, we are undertaking not to crowd them out but to hold them and teach them, and it is an easy problem to discover who they are. They force themselves upon our attention. We cannot be ignorant of their presence. Too often, on the other hand, we fail to notice that some children in our classes might do much more work than we are requiring of them. From time to time a few, by reason of their special aptness, have commanded our notice, but we have not considered that they needed any special opportunities. We have, as a rule, held that these bright children would in some way take very good care of themselves, and that if a child had any special ability he would make his way in spite of all obstac'es. This may be true of the extremely limited number of individuals included in Mr. Galton's definition of genius; for he holds that the actual genius is the only genius; or, in other words, that the only individuals of superior native ability

are the ones who have demonstrated that superior ability by actual accomplishment; and conversely, that those who have not actually demonstrated the possession of superior native powers do not possess them. He rules out the extremely important factor "opportunity." According to Lester F. Ward,

> The only true test of genius (ability) is trial. But unless the conditions for trial are present there can be no trial, and without trial under favorable conditions there is no basis for judging whether there be genius or no.

Ward's position in this matter, though somewhat over-sanguine, is to my mind more reasonable than Galton's.

> Great men [he says] have been produced by the co-operation of two causes, genius and opportunity; neither alone can accomplish it. But genius is a constant factor, very abundant in every rank of life, while opportunity is a variable factor and chiefly artificial. As such it is something that can be supplied practically at will. The actual manufacture, therefore, of great men, of the agents of civilization, of the instruments of achievement, is not a utopian conception but a practical undertaking . . . . it consists in the extension to all the members of society of an equal opportunity for the exercise of whatever powers each may possess.

How slight an opportunity to develop whatever powers they may possess have children who drop out of school and enter the ranks of unskilled labor as soon as the law permits! Often a parent is unaware that his gifted child is the possessor of any special talent unless so informed by the teacher. When so informed, not infrequently a parent will keep his child in school even at the sacrifice of the small but important pecuniary aid which the child's labor would afford. By dealing thus with parents whose only capital is their labor, teachers are able to aid very materially in bringing genius and opportunity together. But keeping children in school is not enough. Adherence to fixed and unchangeable courses of study and to inflexible schemes of classification fall far short of furnishing equal opportunity to all in our schools. Total lack of systematic procedure would equally fail to secure the desired equality of opportunity, for stimulation and guidance must be well organized and constant. We hear of isolated instances of such stimulation and guidance, but not often

of well-organized schemes which may be applied on a large scale, as in a city system of schools.

There is a considerable body of literature on the subject of backward children, the lower 10 per cent. of our enrollment, but very litt!e on the upper 10 per cent., the gifted. Mr. Kendall's presentation of the case of the ablest pupils, two years ago, is the only one giving definite plans of prodecure that I can find in the *Proceedings of the National Education Association.* The Mannheim scheme of classification (briefly described on pp. 43–47 and 121–23 of *Bulletin No. 376, Bureau of Education,* entitled "The Auxiliary Schools of Germany") makes special provision for the abler pupils by grouping them in separate divisions. The "Report of the Committee on Provision for Exceptional Children in the Public Schools," presented at the Cleveland meeting of the N. E. A., devotes the greater part of its space to abnormal and subnormal children. Only one page is devoted to provision for exceptionally capable children, and the attitude taken by the committee is that the problem, while immensely important, remains unsolved. Their position will be made clear by the following quotation (*Proc. N. E. A.,* pp. 350, 351):

> In our conception of what the gifted child should do, we are inclined to look too exclusively upon the shorter time in which he can accomplish the tasks of the conventional course of study. Until we comprehend that for the gifted child a somewhat different atmosphere should be provided, that, too, a different curriculum should be developed, we shall accomplish little.
>
> While the saving of time is not unimportant, the really important consideration is the ideal of effort and accomplishment which the child is forming. It is essential, therefore, that these gifted children have the stimuli that will react upon them in such a way as to cause them to become as vigorous in will as they are acute in intellect; for there is reason to believe that great achievements in leadership are due more to strength of will than to mere intelligence.

In the same volume Dr. Charles A. A. J. Miller, of Baltimore, devotes a half-page to this topic (p. 959). The "Report of the Committee on Six-Year Course of Study" is suggestive, especially in recommendation 4 (*Proc. N. E. A.,* 1908, p. 627). A

year later the same committee made a report (*Proc. N. E. A.*, 1909, 498–503) in which there appear twelve brief statements of plans designed to meet the needs of pupils of varying ability. In the same volume (pp. 175–82), Mr. Walter Siders presents an excellent discussion of certain phases of the subject.

The value of any plan must be measured by its results. We cannot expect complete and convincing reports of results in the early stages in the operation of any plan; but where, as in Indianapolis, Worcester, Baltimore, and elsewhere, special provision made for the abler pupils has been in operation for several years, a tentative statement might at this time be possible. For instance, where high-school credits have been earned by elementary school pupils, it would be possible to make a numerical statement of that particular kind of result and to say something specific as to the class rank of such pupils upon graduation from the high school. Such a statement would be of more value for comparison than an indefinite remark to the effect that by means of a given plan "many pupils save considerable time" or "some pupils are able to complete the high-school course in three years." Instead, therefore, of indulging in indefinite statements, I shall attempt to give a brief statistical report of measurable results accomplished by means of a plan, common to several cities, which, beginning in a small way in the fall of 1902, we have been using in Baltimore. The plan, in brief, is to allow pupils who have done strong work in the sixth grade, with the approval of their parents, to take up extra studies of high-school grade while doing the regular work of the seventh and eighth grades of the elementary school. These studies are Latin, German, advanced English, and, in exceptional cases, some of the mathematics of the first high-school year. Pupils who take this work are transferred to a convenient center in which enough pupils may be gathered together to allow the instruction to be organized on the departmental plan. We started in 1902 with one center, enrolling 173 pupils, and that year we admitted pupils of the eighth grade as well as the seventh. In 1903 and later, admission was limited to pupils just entering the seventh grade. We now have four centers with an enrollment at present of 571 pupils in these

preparatory seventh and eighth grades. For three years one of these centers has been allowed, by way of experiment, to keep selected pupi's for an extra year. Such pupils spend but two years in the high school. Other preparatory pupils ordinarily spend three years in the high school; but in either case, for preparatory pupils the time required for high-school graduation after the sixth elementary grade has ordinarily been five years, whereas six years would have been required had it not been for the high-school credits earned in the elementary school.

The preparatory arrangement was in only a formative and transitory stage during 1902–3, 1903–4, 1904–5. High-school adjustments also were quite difficult at first. Hence, of pupils promoted to high school in 1903, 1904, and 1905, a majority were unable to graduate in three high-school years. With the preparatory class promoted in June, 1905, the tide turns.

Promotion from Preparatory	Total Graduations from High School	Graduations in Three Years	Graduations in Four Years
1903	27	4	23
1904	42	8	34
1905	39	27	12
1906	48	42	6
1907	(Not yet available)	39	(Not yet available)

In other words—

At High-School Graduation of	Prepara ory in Two Years	Preparatory in Three Years	Preparatory in Four Years
1906	..	4	(Could not be)
1907	..	8	23
1908	..	27	34
1909	16	42	12
1910	25	39	6
	41	120	75

The first preparatory-school pupils were graduated from the high school in 1906. By June, 1910, 236 in all will have graduated. Of these, 41 were in the high school proper but two years; 120 were in high school three years, and 75 four years. Among the latter were 57 who spent but one year—the eighth—in a

preparatory center, the one which was opened in 1902. While these 75 pupils who, in the early days of the plan, spent four years in the high school did not save any time, they enjoyed marked advantages. They earned 13,050 credits, or an average of 174 each; whereas the number required for graduation was on'y 150. It is quite evident that the high-school course pursued by these pupils, though not shortened, was made much fuller and richer than it would have been had they entered from the ordinary eighth grade.

To make clearer this general statement about the 75 preparatory pupils who spent the usual four years in the high school, a few particular instances are selected. Fourteen girls, graduating in 1907, gained an average scholarship rank of 46 in a class of 147, or 27 places above the middle of the class. Two of these girls stood, respectively, first and seventh in the class, and four others were among the first twenty in scholarship rank. The average number of credits earned by members of this company was 162. Twenty-two girls graduating from the high school in 1908 secured average scholarship rank of 48 in a class of 160, or 32 places above the middle of the class; and three of them stood, respectively, first, second, and third in the class, while four others ranked among the first twenty. The average number of credits earned by those in this group was 166. Nine preparatory boys, graduating from the high school in 1907, won an average scholarship rank of 34 in a class of 103, or eighteen places above the middle of the class; and four of them ranked among the first ten in their class. The average number of credits earned by members of this company was 192—very greatly in excess over the required 150. Thirteen preparatory boys graduating from the high school in 1908 won an average scholarship rank of 49 in a class of 120, or eleven places above the middle of the class. The average number of credits earned by members of this group was 189, an excess of 39 over requirements.

A study of individual records of high-school graduates who came from the preparatory classes shows in general that a notable gain was experienced in one of two ways: either the student gained a year or more in time, securing the high-school diploma

in three years or less instead of taking the customary four years; or the student, though spending four years in the high school, was able to rank among the honor graduates of his class and to secure a much broader and richer training than the regular four-year student secured. In a relatively larger number of cases where the student took a third preparatory year in the single center offering this extra preparatory year, distinct gain was experienced in both these directions at the same time, because the high-school diploma was secured after only two years in the high school proper, and the student also stood among the honor graduates.

Six preparatory-class boys who spent three years in preparatory class and only two in high school, and who graduated in June, 1909, won a rank of 34 in a class of 133, or 32 places above the middle of the class, and two were among the first twenty in the class. Eight girls from the same preparatory class, graduating from the high school at the same time, made an average rank of 21 in a class of 161, or 59 places above the middle of the class (in Baltimore boys and girls go to different high schools). One of these girls stood second in her class and three others were among the first twenty. The average number of credits earned by this company of boys and girls was 165, or 15 in excess of requirements. Two hundred and thirty-six preparatory pupils will have been graduated from the high schools in the four years ending in June, 1910. This is not a large showing when we consider that in these four years the same high schools (three out of the five in our city) have graduated 1,342 pupils; but the plan is very new compared with the usual one, and a number of obstacles must yet be overcome. Some parents do not fully understand the plan. Not all teachers can be quite impartial in their attitude toward a scheme of work which takes away from the regular classes some of the more desirable pupils. Furthermore, many pupils entering the seventh grade are timid about going to a strange school located at a point somewhat distant from their homes; and so it happens that only about one-third of those recommended as capable of taking up the extra preparatory work avail themselves of the opportunity offered. If the work

were carried on in every large school so that pupils could enter upon it without being transferred away from the home school, doubtless more would attend; but unless there are enough enrolled at one point to form at least three classes, the teaching cannot be economically provided for. For this reason we are using for the preparatory classes only selected centers, and for the further reason that our plan enables us to utilize schoolrooms in portions of the city where the population is decreasing and where consequently some schoolrooms have become vacant.

There are now enrolled in our preparatory classes in the elementary schools 571 pupils, and in the high schools, exclusive of students to graduate in June, there are now 223 students who were promoted from preparatory classes. Mr. Ward's statement that genius is not restricted to any rank of life is borne out, in the case of our preparatory pupils, by the interesting fact that in these classes are to be found boys and girls representing every rank of the social order and wide variety of home conditions. To take this material and, following Ward, make "leaders and builders of civilization" out of it is an ambitious undertaking—so ambitious that we do not aim so high; but, judging by the energy and enthusiasm that these se'ected pupils put into their work, and the marked success which they have so far attained as measured by school standards, we are quite certain that they will display somewhat more of energy and efficiency in whatever field of life-effort they enter than if, during their school days, they had become contented with a lower level of effort and attainment.

DEFINITION IN THE SPELLING RECITATION[1]

J. W. SEWELL
Supervisor of Grammar Grades, Nashville, Tennessee, Public Schools

I. THREE WAYS OF DEFINING

Logical definition requires so full a knowledge that it can state (1) the proximate genus to which the notion signified by the word belongs, and (2) the distinguishing property, or quality, which will set it distinctly aside from all other members of that genus. Some illustrations will help to make the matter clear. For example, the notion *brittleness* is to be defined. The ending *-ness* indicates quality; the notion belongs to the genus quality. But that would, so far, mean the same as *hardness, lightness, happiness, paleness,* etc. So we must find the particular quality which sets aside *brittleness* from others of that genus; and putting the distinguishing quality after the proximate genus, we derive the definition, "Brittleness is the quality of being easily broken."

To define accurately, then, requires exact classification, which means broad information. It also requires a critical faculty, a nicety of discrimination, to include just the essential quality and to exclude all qualities that are not essential.

Obviously, you will say, it is an impossibility to get real definitions from school children; pupils in the lower grades, even those in the upper grades, have neither the wide information which gives them the ability to classify notions nor the critical discrimination which would enable them to know essential from non-essential qualities.

Yet this is not altogether true. Not all definition is scientific, nor is it always built after the logical pattern already examined. To begin with, children are not so poor, after all, in their ability to define, provided the notion to be defined is not foreign to their

[1] This article leads the editor to suggest the desirability of a similar test in some school which does not emphasize the progressive use of logical definition.

experience or by its very nature difficult for anybody to define. Ask a child what *mansion* means, and he will probably say, "A big, fine house." Not so bad. But ask him if he means the city hall; he will say, "No, I mean a big, fine house to live in—a big, fine home." Such a definition should satisfy any sensible teacher.

Try the word *caravan*. One will say, "A lot of camels." "Is it a drove out loose in the desert?" "No; a line of camels loaded with goods." That is a pretty good definition too. Many examp'es like these will be quoted from actual exercises later in this paper.

Definitions of this kind, if they contain just the right thought, are the best of all. If a child repeats the words of the dictionary, it is possible he has the idea in mind; but when he gives an accurate definition in his own colloquial diction, the teacher knows that the actual picture has passed through the child's mind and that the definition is backed up by actual understanding. The native colloquial diction of the child is a thing that deserves encouragement, whereas it is often treated with contempt or at least indifference; and more often still the over-careful teacher takes pains to "correct" every phrase that the child naturally uses for the expression of an idea. By colloquial diction I do not mean the loose combination of vulgarism, slang, and idiom ordinarily thrown together into a sort of linguistic junk-heap by the dictionary-maker and called "colloquial." What is slangy, I should ca'l slang; what is provincialism or solecism I should call by the respective term. The term colloquialism should be the name for the strong native English of conversation, of the familiar letter, and of the playground. It is the lusty idiom, the long-lived vernacular. It dates back beyond Chaucer, much of it; and it will flourish—not only among the children and the unlearned, but among those who talk with vigor, with native freedom and unstudied directness—long after the sturdy old rhetorics are moth-eaten, long after some prim, lexiconed preceptors have closed their serious and musty labors.

The teacher's duty, therefore, is not to reprove the child's colloquial language as s'ovenly or ignorant, but to accept it as correct and honest, a foundation for a broader and more elegant

and sonorous vocabulary. Not only would such an attitude cause the English language of the schoolroom to be less foreign and repugnant, but a most useful avenue would therein be found for the reception of new ideas in all studies of the school course.

There is yet another means of definition with which the young student is almost equally ready; also it is a favorite and doubtless an indispensable method that the dictionary writer has of making clear the meaning of the word he is defining. This is by the use of synonyms. One of the commonest devices for presenting a thought that is new to the mind is by comparison. The whole content may be so unfamilar that to attempt the standard method of classification and limitation by means of the logical definition may be quite useless. Of what use would it be to an Eskimo to tell him the class to which an orange belongs, and the difference between an apple and an orange? But if a snowball be used to illustrate the size of the fruit and the taste of some confection brought by the visitor be cited to convey an idea of the flavor, a conception will dawn in the mind which may be enlightened later into sufficient understanding.

Just so with words. Turn at random in the dictionary and see to what extent synonyms are used in defining: for example, *gratify*, "to please, to indulge, to humor, to requite, to recompense"; *recess*, "a withdrawing, retirement, intermission, an alcove, a niche." Hence, if a word that is new to a child be identified with a familiar one by means of a synonym, he at once appropriates the new word.

Identification by means of synomyms is obviously not the same process as logical definition. It is not a mental process of so high an order as that. Whereas logical definition places a notion in its proximate genus and selects from its qualities that which differentiates it from other members of that genus, the use of a synonym indicates that the general implication of the word is comprehended sufficiently well to recognize that two or more notions roughly or accurately cover the same ground. Thus they are taken as wholes and compared as wholes.

Consequently we may expect children in the lower grades to use synonyms freely in their definitions. The logical definition is

beyond the powers of most of them; the colloquial definition may not be attainable on account of inability to trim between even familiar notions; but the vaguest hold that one has on a word will make it possible for him to offer a word that he regards as of similar meaning and therefore identical—a synonym of it.

In these two methods, colloquial definition and use of synonyms, the teacher has the most direct approach to the minds of pupils. A new word, *purloin,* occurs in the lesson. It is utterly unfamiliar. The teacher says, "It means to take what doesn't belong to you; to steal"; and no dictionary will ever make the idea plainer than that.

By these two methods, young children who have not yet learned to draw fine distinctions may express their understanding of words. At the beginning of practice in definition, say in the 4-B grade, the attempts are of course awkward; but they are in the right direction, since they are endeavors to give expression to a shadowy idea.

To illustrate these attempts, and to show the processes of mind natural to a child at this age when he is attempting to appropriate and reproduce a dictionary definition, we select the words *station, caution, patience, familiar,* and *terror* from a lesson. After taking the suggestions of his teacher, the child goes to his dictionary and stores away (he thinks he does) the definitions. In recitation they appear about thus:

1. "A *station* is where people get on the train."
2. "*Caution* means to look out, to take care."
3. "*Patience* is being quiet, not fussing."
4. "*Familiar* means what you know right well."
5. "*Terror* is when you are scared a whole lot."

In 1, there is no genus, only partial description; in 2, a noun is defined as a verb; in 3, clear knowledge is indicated, even if only partly expressed; in 4, an adjective is defined as a noun; in 5, an abstract noun lacks the genus, and the specific difference is quaintly worded. Yet I do not hesitate to say that, as 4-B definitions, these are good enough, every one; the essentials of each idea are evidently grasped. A pupil of this grade is not expected to know the parts of speech. The means by which he

got the substance of these five words into his mind was the vehicle of colloquial, free definition or fairly good synonyms.

Of course, these two methods must give way gradually to more mature and accurate methods. How this is to be done, how in some general way and at indefinite periods some progress is to be made, will appear from the tests detailed below. But a necessary caution to teachers just here is that perfect definitions must not be expected of children until they are far along in the course of study.

II. A TEST AND ITS RESULTS

From the regular textbook, one hundred words were selected out of the assignment for the respective school year, and these were handed to the teachers of fourth-year, fifth-year, and sixth-year pupils. The words had been studied in the dictionary some weeks before, and had been used in sentences in class. Given as a test thus, without warning, the words were defined naturally, with no possibility of an artificial recitation from memory in terms that might not be understood. Given to one large school only, it was assured that children of much the same environments should define all the words. In all, about six thousand definitions were tabulated so as to assign each to one of the three methods discussed in the preceding pages.

Grade	Colloquial Definition	Synonyms	Logical Definition
	Per cent.	Per cent.	Per cent.
4-B	89.5	1.5	9
4-B	82.2	3.5	14.3
4-A	73.7	15.3	11
4-A	51	43	6
5-B	71	24	5
5-B	42	43	15
5-A	80	15	5
5-A	39	16	45
6-B	35	35	30
6-B	17	21	62
6-A	21	5.5	73.5
6-A	16	14	70

Allowing for difference in quality among the teachers, the table shows a striking progression, almost regular, in working

away from the less scholarly up toward the more scholarly methods of defining words.

Interesting examples of colloquial definition will be quoted to show how satisfactory these may be:

Fourth Grade

Iceberg: "a big piece of ice in the cold ocean"; "frozen water floating down a stream."
Sausage: "ground meat that comes from a pig."
Machinery: "lots of work"; "steel stuff to thrash corn and wheat."
Strait: "a small body of water that goes like a gate."
Pineapple: "a plant that grows in the ground with its head out."
Caravan: "a drove of men on camels on the desert."
Mechanic: "a man that fixes things."
Patient: "a doctor's sick person"; "one you wait on"; "to wait long and be still"; "to be quiet and take things as they come."
Patience: "to wait and not to grumble"; "what it takes to train fleas."
Bashful: "ashamed to talk"; "scared to come out"; "if some one would ask you to say a piece and you would not and you would cry and be so fretful."
Speechless: "a person who has been told something dreadful and hardly can stand it."
Dumb: "is when you can't talk; speechless is when you are too frightened to speak."

Fifth Grade

Wisdom: "You know a lot."
Vision: "something that you see at night"; "something seen in a dream."
Mosquito: "a long slender fly that has a long bill"; "an insect that flies around at night and bites."
Butterfly: "a fly that has slick dust on its wing."
Perseverance: "sticking to a thing"; "not to stop till you win."

Examples of synonyms and logical definitions are not quoted, for the reason that these are in dictionary language and would not be in any way unusual.

III. SUMMARIES AND CONCLUSIONS

1. Definition does not consist in memorizing and reciting ponderous phrases from the dictionary. These may be utterly foreign to the child's mind. He may deceive himself by learning mere forms; he may deceive his teacher thereby; but certain it is that mere memorizing is not definition.

If what he gets is a definition, it must be so expressed as to

tie the new word to something in the child's conscious experience. If it happen to be a synonym, it must identify the new term with some well-known term which is part of his ready language and his actual knowledge. That which he takes in as a definition, if really a definition, must be current coin receivable by him at full face value.

2. In the tabulation by grades above, observe—

a) That the colloquial definitions decrease in almost a regular way from about nine-tenths of the whole in the 4-B Grade to about one-sixth of the whole in the 6-A Grade.

b) That the logical definitions increase almost as rapidly as colloquial definitions decrease, from about one-tenth of the whole in 4-B to nearly three-fourths in the 6-A.

c) That the number of synonyms varies according to the nature of the words to be defined, but that more of them are used about the middle of the course. Probably this is because few synonyms are attainable in the Fourth Grade, and they are not greatly needed in the Sixth, since by that time pupils are able to use logical definitions freely.

3. Do not refuse to recognize the value of colloquial English in definition. At some stages in the child's education, the colloquial idiom is particularly useful as a vehicle for taking in as well as giving out ideas. As shown in the examples quoted, these definitions are frequently accurate, sometimes remarkably incisive, remarkably direct and complete. In other cases they are very loose: they define a noun as a verb, an adjective as an adverb; they place the notion in almost any large group not proximate; they may present only a familiar phase or example instead of a definition. In the lower grades colloquial definitions are not only unavoidable but acceptable. In the Fifth Grade they should be taken sparingly; and above that grade they should be set aside as rapidly as possible in favor of logical definitions, since herein is a more extensive, more elegant, and more accurate vocabulary.

4. When synonyms are allowed as definitions, the teacher should be certain that the synonym offered is better understood than the word to be defined. For example, for the word *curiosity*, the pupil should not give the synonym "inquisitiveness"; for *revive*, "reanimate"; for *fascinate*, "captivate"; for *caution*,

"wariness" or "admonition." In none of these instances is there evidence that the child has gained a new thought.

5. As to the progress of definition from grade to grade, only general suggestions may be given, for much depends upon the nature of the words in each lesson.

In the Third and Fourth Grades, few exact definitions should be expected. Not only does the pupil lack ability to classify and discriminate so as to form logical definitions, except perhaps those of terms in arithmetic, geography, etc. which he has fully learned; he lacks also the *vocabulary* for expressing nice shades of thought, and his stock of useful synonyms is limited. Hence most children have to fall back upon colloquial, loose definition.

In the Fifth Grade, much the same condition prevails. The pupils have perhaps improved in their ability to handle the dictionary, so that one-third or more of the words should be accurately defined. A'so more synonyms have been gathered, and a large percentage of these will be used.

In the Sixth and Seventh Grades, attention should be paid to correct parts of speech in the definitions chosen. For example, pupils in these grades should not be allowed to say, "*Jocose* means to be jolly," or "*Census* means to count all the people."

In these grades should be emphasized another matter which is too commonly neglected. Children usually suppose that the purpose of the dictionary is to give the pronunciation of a word, its derivation, then its various meanings—that is all. This idea accounts for a large number of errors to be found in the written work of pupils in high schools as well as in grammar schools—such sentences as, "The girl will *unfurl* the package of candy"; or, "The man fell down and hurt his canopy" ("covering over the head"); or, "The apple was *precocious*" ("maturing early"). Actual school sentences these are. The *application* of words, as well as their meanings, must be learned, and in the Sixth and Seventh Grades much of this work may be done. In assigning the lesson, the teacher may point out beforehand some words that will be troublesome, and warn the pupils to find in the "big dictionary" illustrative sentences that will show the one or more applications.

Furthermore, when synonyms are chosen for definition, they should now fit closely the word to be defined. For example, "robber" would not do as a synonym of *pirate;* nor should "controversy" be accepted as an exact equivalent of *wrangle.*

The Eighth Grade should give more attention to etymology and word analysis. Students in this grade should learn that the derivation of the word and the present meaning are not necessarily the same: *circumscribe* must not be defined as "to draw around," nor *philology* as "love of words."

Pupils in this grade ought to be able to define and use in their current sense certain less common newspaper terms, such as *ultimatum, cuisine, expansion, reciprocity, optimist,* etc. Merely to give a general idea of their sense is no test of skill in definition.

In all this work, the necessity for free oral discussion in the class cannot be over-emphasized. In no other way can teachers expect their classes to conquer the many linguistic problems.

6. One who has had much experience with the struggles of children with definition cannot forbear a word of regret that a simple dictionary for children does not appear to exist. The smaller the volume, the more condensed and consequently more general and colorless, are the definitions. Great progress has been made in almost all other lines in elementary school work, but the pupil in the lower grades confronts all the difficult puzzles that his grandfather did—he is dazed by the ponderous roll of words if he finds a definition in full, or he is cheerfully bethumped with synonyms most foreign and incomprehensible.

It may be replied that only fairly mature minds are able to grasp definitions, which must of necessity be abstract and fully expressed—therefore they cannot well be simple. But children from Fourth Grade up must search for the meaning of words, and it does seem that a consistent attempt to use simple language in the smaller dictionaries might be successful. If perhaps five thousand to eight thousand words of the ordinary grammar school vocabulary were made into a volume, the more usual meanings of these given in simple language, and brief illustrative sentences added to help the child, the whole matter of definition might be removed from danger of the slough of despond.

AGRICULTURAL EDUCATION

STATE NORMAL SCHOOLS

BENJAMIN MARSHALL DAVIS
Miami University

It is the business of state normal schools not only to train teachers but also, as far as conditions permit, to find out by experiment in practice schools, what to teach and how to teach it. When both aspects of the work of these schools are considered, the important relation which they bear to agricultural education, particularly in elementary schools, becomes apparent. The problem of the normal school in this matter is twofold: (*a*) to meet the rapidly growing demand for teachers who are able to give satisfactory instruction in elementary agriculture, and (*b*) to reduce the subject to a proper pedagogical basis, in other words to determine what phases of this great subject may be undertaken in the elementary schools under average school conditions both from the standpoint of the child and of the teacher.

The following is a brief summary of the efforts of the state normal schools to find a solution of this twofold problem. The data have been gathered from one hundred and thirty-seven of the one hundred and forty-five schools now actively engaged in training teachers.[1]

When the diverse social, educational, and industrial interests of the country as a whole are considered it is to be expected that these differences will be reflected in the types of instruction given in the various normal schools. To these differences brought about by conditions more or less local are to be added those due to tradition. The older schools are usually less elastic and adaptable than the newer ones. Bailey regards the latter fact as a very serious obstacle in the way of a general introduction of agriculture into these schools. He says, "One cannot look to all the existing normal schools in the older states, or even to any

[1] Just now the nine state normal schools of Oregon are closed, owing to lack of financial support from the state.

considerable part of them, for the training of teachers for this kind of work" (28).[2] This statement must be qualified for there are many exceptions. For example, the Johnson State Normal School of Vermont has been offering courses in agriculture for over eight years, while the one at Laramie, Wyoming, recently established, does not give courses in agriculture but prepares its graduates to teach in cities.

The number of graduates of state normal schools that teach in agricultural communities varies exceedingly not only in different states but among the schools of a single state. Reports from seventy-six show that twenty-eight have from 60 to 100 per cent. of their graduates going into schools of rural communities; twenty-seven have from 20 to 50 per cent.; and twenty-one have from 1 to 10 per cent. Of the twenty-eight having from 60 to 100 per cent. of their graduates teaching in rural communities, twenty are offering instruction in agriculture and fifteen require it; of those having from 20 to 50 per cent., twenty offer instruction in agriculture and nine require it; of those having from 1 to 10 per cent., eleven offer agriculture and three require it. If this proportion should apply to all the schools it would seem to indicate that the number of graduates of normal schools going into agricultural communities is quite large, perhaps larger than generally supposed. It indicates also a tendency of the schools to adapt their work, at least to the extent of introducing agriculture, to the needs of the communities where their graduates teach. This estimate is only approximate and only inferences may be drawn from it. It does not take into consideration the large number of students who take a portion of the course and who for the most part go into the country to teach. One normal-school president says: "There are very few of our graduates who teach in rural schools, but there are multitudes of our undergraduates who do so." This statement suggests another phase of the problem of normal-school instruction which has received little or no attention, viz., what recognition in the course of study or character of instruction should be given to the

[2] The references are to bibliographies of previous articles of this series and to bibliography at end of this article.

fact that so many who attend the normal school for part of the course drop out and become teachers in rural schools? For example, in the school just referred to, the instruction is evidently adjusted to meet the needs of students who expect to teach in city schools. No agriculture is taught although "multitudes of the undergraduates" become teachers in rural schools, and in the state itself agriculture is the chief industry.

The development of agricultural instruction in state normal schools has on the whole kept pace with the growth of the general interest in the subject. It is hard to say just when this subject was first taken up. Probably the first institution to begin this work under the name of agriculture was the Rock Hill State Normal School of South Carolina, which offered courses in agriculture as early as 1895. The Johnson State Normal School of Vermont offered its first course in agriculture in 1901, and about this time the subject was introduced in some of the state normal schools of the Middle West (45).

In 1906 a report on "Preparation of Teachers to Give Instruction in Elementary Agriculture" was prepared for the Joint Board of the California State Normal Schools trustees (46). This report showed that the normal schools of Minnesota, North Dakota, Nebraska, Missouri, and South Carolina were attempting to prepare teachers to give instruction in elementary agriculture; that some attention was being given to the subject in the normal schools of Illinois, Utah, and Oklahoma; that nothing was being done to furnish such training in the schools of Iowa, Kansas, Michigan, Ohio, Pennsylvania, Alabama, North Carolina, or New York, but that several of these schools were, however, getting ready to undertake the work as soon as possible.

In a study of ninety-one state normal schools reported to the National Education Association in 1907, it was shown that seventy-five believed in an instruction in agriculture, and were either giving it in some form or desired to do so. Sixty-one of this number were either offering courses or had made plans for such courses for the following year. Seven of these were giving only a little agriculture in connection with other science courses. Eight were doing still more in connection with school gardens

and were planning to extend the work. The remaining forty-six were giving definite courses in agriculture (47).

During the present school year, of one hundred and thirty-seven state normal schools, eighty-seven are now giving some instruction in agriculture. In fifty-two of those offering courses, twenty-two are elective and thirty required. Of those not giving instruction in agriculture, thirty-seven give it incidentally in connection with botany, nature-study, or some other course in science, and nearly all those giving courses in agriculture also give some attention to the subject in other science work, particularly in botany and nature-study.

It will be seen from the above that normal schools are rapidly introducing agriculture. The number of schools offering such courses has increased from about 20 per cent. in 1906 to more than 50 per cent. in 1909. Indeed, the demand for well-qualified instructors in agriculture for normal schools exceeds the supply. One normal-school president says that he tried for over one year to secure a competent instructor. Davenport says: "The call is sharp from the normal schools of the Middle West which have this year (1909) taken some of the best trained and most promising teachers of this class" (48, p. 144). The call is not alone from the Middle West but the East as well. During the present school year one of the normal schools of the New England states secured a teacher who, at the time of his appointment, was professor of agricultural education in an agricultural college of the Middle West.

Letters from presidents and others connected with normal schools not now offering agricultural instruction indicate that in many of these schools plans are under way to introduce the subject as soon as possible. Included in this number are the normal schools of New York and Pennsylvania, none of which now offers such instruction except incidentally with nature-study and other subjects.

The character of the work in agriculture varies much in different schools. But there is one feature of the instruction that is common to all, viz., as evidence of the newness of the subject and of the fact that it is in an experimental stage. In

some schools the work in agriculture is only in name, much better instruction being given in other schools in courses in nature-study.

The time given in the course of study varies from ten weeks to two full years, the average being less than one year. One interesting reaction following the demands for agricultural instruction is to be found in the readjustment in science courses, especially in the biological sciences. The title agricultural botany and agricultural zoölogy frequently occurs in courses of study. One fails to find in some of these, however, justification for the new titles, for the instruction remains much the same, with emphasis on morphology. The attitude of certain teachers of bio'ogy toward their subject is well illustrated by the following extract of a letter received from a member of the faculty of a large state normal school. "I obtained over one dozen kinds of water animals one day from a pool when the science (biology) teacher said he saw none in it. He was sending to New York City for crayfish when a brook near the building was ful'l of them. The boys (in training school) had made nets and would have been glad to have caught the animals for him." Perhaps the influence of such a teacher was partly responsible for the ignorance of a practice teacher (a senior) who stood in a bed of marigolds and asked if there were any marigolds in the garden. The introduction of agriculture will no doubt have much to do in changing this attitude.

> It will in the end exert a profound influence upon the teaching of general science. There is no manner of doubt that the masses of people are best benefited by the teaching of science in its applied form. . . . . Agriculture is evidently to be the pioneer in this business of the adaptation of science to the common affairs of life in the schools that are attended by the masses, and if this is true its incidental service may be even greater than its direct. In the meantime it is vastly significant that the schools where teachers are made have at last commenced to study real life in one of its most concrete forms (48, pp. 45–46).

Normal schools have so far been too much occupied in providing for instruction in agriculture to give much attention to the pedagogical problems of the subject. These problems concern (*a*) the organization of courses in the normal school itse'f,

and (*b*) methods of teaching the subject in the public schools. Naturally, the former has been the first to receive attention. The organization of work in agriculture has been in two directions, one in the science work already referred to, and the other in the purely agricultural courses recently introduced.

Special efforts of adjustment have affected nature-study more than other science studies. Many believe that as far as the elementary schools are concerned agriculture should have the nature-study aspect, or as some prefer to say, nature-study should have an agricultural trend; that since nature-study has to do with material drawn from the child's immediate environment, and since a large part of this environment is more or less agricultural (consisting of animals and plants under control of man) a good course in nature-study forms an adequate preparation for a teacher to give such agricultural instruction as will meet the needs of rural schools, and at the same time enables a teacher to make use of school gardening and other practical or economic phases of the subject in city schools (49).

The particular direction in which nature-study has been most modified in its readjustment has been in the school garden (50). It has been found that the school garden may serve as a very effectual means of unifying most all nature-study work. Children are not only able to "grow things" in gardens, but in doing this work successfully have had to solve many of the problems that are fundamental to agriculture. The character of the soil, the conservation of water by cultivation, the protection of plants from insect and other enemies, and many other factors of successful plant growing are encountered. Many normal schools have regarded this readjustment of nature-study and other science work as sufficient to meet the demands for agricultural instruction in the training of elementary teachers, and are working with this end in view. Some of the normal schools of California, Illinois, Massachusetts, New Jersey, and other states, and many of those schools now offering courses in agriculture, have made substantial progress in the readjustment of science work.

Instruction in agriculture as a separate subject in normal schools is now in an experimental stage. Yet certain work and

methods seem to have proved successful. The first publication of work adapted to normal schools was in the form of a textbook based on teaching experience in the Kirksville, Mo., State Normal School (51). Recently a very concrete treatment of the problem has appeared as a government publication. It is an account of what is actually being done and how it is done in a typical normal school. The writer says in his introduction,

> The aim of the normal school is to prepare young men and women to teach in the elementary schools of the state. The young people who attend come from farms or smaller towns, and when they go out to teach they are called upon to give instruction in what is known as elementary agriculture. To meet this demand, a department of agriculture was established four years ago. The course at first extended through one term's work but has been lengthened until practically two full years are now devoted to agricultural instruction. The work has attracted many young people, and the success with which they have subsequently instructed others along these lines indicate that the instruction has been effective. Not all the problems in teaching agriculture have been solved but it may justly be claimed that a few of the more difficult of them have been solved (52).

Other similar publications of successful practice which has been tested by the work of students when they become teachers will contribute much toward the pedagogical efficiency of the subject.

From the standpoint of methods of teaching the subject in the public school, little has been done. A very promising beginning of the study of this question was made at the Peru Nebraska State Normal School in February, 1909, when the Normal Agricultural Society was organized. The purpose of this society is to aid teachers in "handling the new subject of agriculture in public schools of the state." Those interested in its organization have expressed the hope that "it will become a pedagogical laboratory for testing and discovering methods to improve and extend the teaching of agriculture throughout the schools of Nebraska." The director is the head of the department of agriculture in the Peru Normal School and conducts for the society a column in the *Nebraska Farmer* which is to be the official publication of the society (53).

An interesting experiment limited to one phase of agriculture is now being conducted at the Western Illinois State Normal

School at Macomb in co-operation with the Illinois State Agricultural Experiment Station. A soil experiment field of two and one-half acres has been provided by the normal school. The school

> as its share of the responsibility, takes full charge of the field operations implied in the plans. Such co-operation provides for both scientific and educative values in the work and it is proposed to make the results as far reaching as possible. Not alone to teachers and prospective teachers will it be valuable but as well to persons now engaged in agricultural practice (54).

A few helps to teachers have been worked out in normal schools and published, for example, from Cape Girardeau, Mo. (55), and Chico, Cal. (56). They consist of discussion of agricultural subjects suitable for public schools, and methods of instruction.

There is one large class of normal-school students already mentioned that is not adequately provided for. This class is made up of students who wish to teach in rural schools and who can spend only a year or part of a year in preparation, and is the largest in states where emphasis is placed on examination for certification. These students attend primarily to prepare for examinations.

It has been the custom in most schools to provide for these students by offering short review courses. Often instruction in elementary agriculture and sometimes in manual training forms a part of this work, and is really the only part that takes into consideration the life of the community in which these students are to teach. These short courses are generally regarded by normal-school teachers as unsatisfactory, both on account of the shortness of the time given and the irregular preparation of the students themselves. Although the situation is recognized as a difficult one very little has been done to improve it. There are several schools, however, that have undertaken to give their students of this class some real preparation for this work as teachers. Some have arranged with local public-school authorities for a one-room rural school to be used as an observation or practice school. Others have built or have control of a one-room

schoolhouse and have endeavored to make it a model of its kind so as to show concretely the possibilities of a rural school. For example, the Kirksville (Mo.) State Normal School has a well-appointed single-room schoolhouse. It has been

> designed and constructed to show that a rural school anywhere can have all the conveniences and comforts offered in any city building. The children are transported in covered vehicles to and from school. It is a model school so far at it can possibly be made such. It is to exemplify the best things which a school board and a good teacher with up-to-date facilities can do in and for a rural school.

Special provision is made for instruction in manual training, elementary agriculture, and home economics.[3]

Two somewhat similar plans for rural education should be mentioned in this connection. Both of these have the larger possibilities of teaching in rural communities in view. One is a course of two years called "rural arts" given by the Harrisburg (Va.) Normal and Industrial School for Women. The course requires high-school graduation for admission. The object is to

> give its students a training of mind, heart, and hand which will fit them for efficient service in rural schools, and for intelligent and appreciative participation in the life of rural communities. It will not attempt to train farmers; it cannot be expected to turn out agricultural experts. Its work will be limited to those phases of farm life in which women usually, or frequently, or may properly participate, and to that portion of agricultural instruction which may properly be given by female teachers in elementary and high schools.

The course includes besides some of the regular normal courses, horticulture, elementary agriculture, rural sociology, poultry raising and bee culture, dairying, forestry and floriculture, and theory and practice in rural arts.[4] The other is a course of two years known as "rural industrial education" given by the Ohio State Normal College of Miami University. Its requirements for admission are the same as for other college courses. This

[3] *Bulletin First District Normal School, Kirksville, Mo.*, IX, No. 1 (1909), 9–16.

[4] *Bulletin State Normal and Industrial School, Harrisburg, Va.*, I, No. 1 (1909), 88–92.

course is expected to meet the needs of township superintendents, principals and science teachers of high schools in rural communities, and to enable these teachers to adapt the work of their high schools more nearly to the life of the school communities. The course includes education, school administration, rural sociology, agriculture (two years), forestry, botany, manual training, rural education, methods of rural school organization, physical geography, trigonometry and surveying, and physics of farm machinery. In planning this course, which is at present a tentative one, the influence of the high school of an agricultural community on the elementary schools was carefully considered. Most of the teachers in the elementary schools of these communities are graduates of these high schools. They seldom receive further training. Therefore, with a high school organized to meet the needs of the community, its influence should thus extend to the elementary schools through its graduates who become teachers.[5]

Any account of the work of the state normal schools in agricultural education would be incomplete without some special reference to the teachers themselves who are engaged in this work. Many are doing their work under considerable disadvantage. This applies not only to the fact that agriculture is a new normal-school subject to be adapted to new conditions but also to the fact that it has been added as an additional subject to a teacher's already overcrowded programme. One teacher writes that he is offering agriculture this year for the first time, but is expected also to teach physics, chemistry, botany, zoölogy, physiology, geology, and physical geography. Several teachers have bought small farms primarily in order that their students might have the advantage of actual field experimentation.

With the earnest body of teachers now beginning to take up the work and with the progress already made it seems likely that the demands for agricultural instruction in the training of teachers in state normal schools will soon be met. The real test of the value of this training is in the work of the teacher who goes out from the schools and it is now too early to pass judgment.

[5] *Bulletin, Miami University*, Series 8 (1910).

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The facts of the text have been obtained chiefly from personal letters, normal-school catalogues, and reports of presidents of normal schools to state officers of education. Only those publications referred to by number in the text are included in the following list:

45. *Outline of the Courses in Science.* Madison, Wis.: Board of Regents of State Normal Schools (1901), pp. 32.

Each of the subjects of instruction in the state normal schools is briefly outlined. About seven pages are devoted to agriculture and include purpose of subject, scope (soil, plant and crops, animals and stock), and plan.

46. "Shall Teachers Be Prepared to Give Instruction in Elementary Agriculture?" B. M. DAVIS. *The Western Journal of Education,* May, 1906, pp. 5–15.

This is a report submitted to the Joint Board of the California State Normal School Trustees at its annual meeting held at Chico, Cal., April 15, 1906. It discusses the organization of agricultural education in the United States, agriculture in the elementary schools, work in Canada, N. E. A. report on industrial education in schools for rural communities, work of the normal schools, the problem as concerns the California normal schools including a tabulation of answers to questionnaire sent to all the county superintendents of the state, and a discussion of the work of the normal school.

47. "What Has Been Done by Normal Schools and Agricultural Colleges for Popular Education in Agriculture." E. E. BALCOMB. *Proceedings of the National Education Association for 1907,* pp. 1069–75.

This report is a summary to answers to letters to the president of each agricultural college, to each state normal school, and to certain other schools of the United States.

48. *Education for Efficiency.* E. DAVENPORT. Boston: D. C. Heath & Co., (1909), pp. 184.

Its subtitle is "A discussion of certain phases of the problem of universal education with special reference to academic ideals and methods." The book is in two parts: the first, a discussion from general educational standpoint including education for efficiency, industrial education with special reference to high school, as a phase of the problem of universal education, educative value of labor, culture aim and unity in education; the second, an illustration of the principles discussed in first part as applied to agriculture—including agriculture in the high school, in the elementary school, in the normal school, and the development of agriculture—what it is and what it means.

49. "The Organic Field of Nature-Study." GEORGE H. HUDSON. *Nature-Study Review,* Vol. III, No. 5 (1907), pp. 129–35.

A scheme is given outlining the subject in considerable detail in two parts: one, the physical or practical, the other, the psychical. Both are amplified by a discussion which follows.

50. "School Gardens for California Schools." B. M. DAVIS. Chico, Cal.: *State Normal School Bulletin No. 1* (1905), pp. 79.

This is a manual for teachers. It discusses the history of school gardens and their educational importance, the plant and its relations, plant

propagation, instruction including aim and scope, practical work, correlative subjects, adaptation to school conditions, etc. The annotated bibliography of nearly three hundred titles is a summary of the literature of the subject up to 1905.

51. *Agriculture through the Laboratory and School Garden.* C. R. JACKSON AND L. S. DAUGHERTY. New York: The Orange Judd Co. (1905), pp. 419.

"The preparation of this book was undertaken, primarily, that the classes in agriculture in the State Normal School of Kirksville, Mo., might have in one book the directions for all the laboratory experiments and exercises, and such information as would enable them to understand the results of these experiments."

52. "Normal School Instruction in Agriculture." N. J. ABBEY. *U. S. Department of Agriculture, Office of Experiment Stations, Circular 90* (1909), pp. 31.

This circular "sets forth in a brief way the manner in which agriculture is taught at the Maysville State Normal School, No. Dakota." It contains a discussion of why normal schools should train teachers in agriculture and the place of agriculture in the normal school curriculum. Most of the circular is a detailed account of the work, including textbook instruction, class exercises, laboratory instruction, typical laboratory exercises, apparatus, the school garden, the model school, visiting a rural school, field excursions, methods, correlation, and difficulties.

53. "Normal Agricultural Society." CHARLES R. WEEKS. Peru, Neb.: *State Normal School, Special Circular* (1909), p. 1.

This circular gives history, purposes, and plans of this organization.

54. "Western Illinois State Normal Experiment Field." J. T. JOHNSON. Macomb, Ill.: *State Normal School, Circular No. 1* (1907), pp. 4.

The circular contains statement of purpose, location, and plans of conducting the soil experiment field.

55. "A Correlated Course of Study in Agriculture, Geography, and Physiology for Rural Schools." E. A. COCKEFAIR. Cape Girardeau, Mo.: *State Normal School, Special Bulletin* (1909), pp. 63.

It contains daily programme of recitation; general outline including such subjects as seed, corn judging, corn selection, corn breeding, how corn grows, the soil, crops, foods, live stock judging, markets, dairying, gardening, fruit growing, forestry, cooking, sewing, home decoration; elaboration of outline.

56. "Course in Nature-Study and Elementary Agriculture." RILEY O. JOHNSON. Chico, Cal.: *State Normal School, Special Circular* (1908), pp. 8.

The work outlined in this circular is designed for the ungraded schools of California. There are three parts: (1) an outline of the work, (2) a specimen lessons, and (3) a list of references.

OUR INHERITED PRACTICE IN ELEMENTARY SCHOOLS

S. CHESTER PARKER
The University of Chicago

IV. FREE SCHOOLS AND THE LANCASTERIAN SYSTEM

This is the fourth of a series of papers which aim to illustrate a method of studying the history of education in which the emphasis is placed on educational practice in its relation to social conditions. The Lancasterian monitorial or mutual instruction system, which prevailed in the larger cities of the United States during the first quarter of the nineteenth century serves as an admirable illustration in contrasting this kind of history of education with the history of educational theory.

This system was imported from England in 1806 for use in New York city schools. It derived its name from the use of the more capable children as instructors of the others who were organized in small groups, and from its exploitation by Joseph Lancaster.

Some histories of modern education do not mention the Lancasterian system at all, in others it is given only passing comment as a discredited method, and in general, writers express surprise that the system should ever have been considered or used. These same authors will present at length the theories contained in the *Great Didactic* of Comenius published in 1657, but which was forgotten for two centuries and only re-discovered in 1841. Yet the theories of Comenius for the improvement of the technique of instruction in elementary schools were practically unknown in America, while the Lancasterian methods which aimed at the same result, were being used as the basis of rapid improvement in elementary education.

In some respects Comenius and Lancaster were quite similar. They were both practical teachers who invented many improved devices which were used successfully in practice, and they were

both enthusiastic about the possibility of formulating a mechanical method which would, in a way, work itself. The following quotation from Comenius serves to represent the ideas of such a method held by both men.

> The art of teaching, therefore, demands nothing more than the skilful arrangement of time, of the subjects taught, and of the method. As soon as we have succeeded in finding the proper method it will be no harder to teach schoolboys, in any number desired, than with the help of the printing-press to cover a thousand sheets daily with the neatest writing, or with Archimedes' machine to move houses, towers, and immense weights, or to cross the ocean in a ship, and journey to the New World. The whole process, too, will be as free from friction as is the movement of a dock whose motive power is supplied by the weights. It will be as pleasant to see education carried out on my plan as to look at an automatic machine of this kind, and the process will be as free from failure as are these mechanical contrivances when skilfully made.

From the standpoint of present day theory in which freedom and individuality is emphasized the mechanics of the Lancasterian system may seem absurd, but if we consider it in the light of the lack of public provision for education in the first quarter of the nineteenth century and in contrast with the unintelligent wasteful methods of instruction then in vogue in elementary schools, we can better appreciate the exaggerated hopes for the system expressed at that time. Such men as Governor De Witt Clinton, of New York, Governor Wolcott of Connecticut, William Russell, editor of the *American Journal of Education,* John Griscom, noted scientist and educator, who through a period of more than twenty years believed in the system, were not visionaries to be led astray by an irrational device. Governor De Witt Clinton's tribute to the system is best known. In 1809, he said:

> When I perceive that many boys in our school have been taught to read and write in two months, who did not before know the alphabet, and that even one has accomplished it in three weeks—when I view all the bearings and tendencies of this system—when I contemplate the habits of order which it forms, the spirit of emulation which it excites, the rapid improvement which it produces, the purity of morals which it inculcates—when I behold the extraordinary union of celerity in instruction and economy of expense—and when I perceive one great assembly of a thou-

[1] Comenius, *The Great Didactic* (Keatinge), p. 248.

sand children, under the eye of a single teacher, marching with unexampled rapidity and with perfect discipline to the goal of knowledge, I confess that I recognize in Lancaster the benefactor of the human race. I consider his system as creating a new era in education, as a blessing sent down from heaven to redeem the poor and distressed of this world from the power and dominion of ignorance.[2]

Governor Wolcott of Connecticut in his message to the legislature in 1825 said:

If funds can be obtained to defray the expenses of the necessary preparations, I have no doubt, that schools on the Lancasterian model, ought as soon as possible to be established in several parts of this state. Wherever from two hundred to one thousand children can be convened within a suitable distance, this mode of instruction, in every branch of reading, speaking, penmanship, arithmetic, and bookkeeping, will be found much more efficient, direct and economical, than the practices now generally pursued in our primary schools.[3]

The testimony of a prominent contemporary professional educator is of the same nature as that of the two governors quoted. William Russell was editor of the first successful American educational periodical, the *American Journal of Education,* published from 1826 to 1830. Mr. Russell was one of the most important schoolmen of the period, in touch with educational movements in Europe and America, interested in the training of teachers, in Pestalozzianism, and other methods of improving teaching. In 1826 he edited a *Manual of Mutual Instruction,* containing directions for organizing instruction on the Lancasterian plan and a history and justification of the method. In the preface it is stated that the volume is issued in response to repeated calls which had been made "at the office of the *Journal of Education* for information concerning the system of mutual instruction, and for works calculated to assist teachers in introducing it." This little volume of 121 pages is a most instructive source of information as a contemporary description of the development of the system in New York City, Albany, New Haven, Boston, and elsewhere. Mr. Russell strongly

[2] W. O. Bourne, *History of the Public School Society of City of New York,* p. 19.

[3] Wm. Russell, *Manual of Mutual Instruction* (Boston, 1826), p. 102.

favored the system and even printed an argument of fourteen pages in favor of adopting it in colleges.

The enthusiasm of Dr. John Griscom for the monitorial system lends additional evidence of its significance. Mr. Griscom's travels published as *A Year in Europe* is one of our best sources for information concerning schools of that period. In 1805 he opened the first course of popular lectures on physics and chemistry given in New York City. He was the principal organizer of the Society for the Prevention of Pauperism and of the New York House of Refuge (1824). Mr. Griscom had been impressed with the successful operation of the monitorial system in the New York elementary schools and had visited the High School of Edinburgh where, he said:

> I saw a school, eminent almost to a proverb for the elevated tone of its classical attainments, entirely under the regimen of the monitorial system. Such was the success attending it, that it was universally admitted that the 150 boys under the head master made a more rapid progress, were more thoroughly taught, and pursued their studies with more vigor and alacrity, than in any institution in which the monitorial system was not adopted.[4]

Impressed with the necessity of a similar high school in New York City, Mr. Griscom organized a stock company, erected a three-story building, employed a competent assistant, and in 1825 opened a school which soon contained 650 scholars. It continued in successful operation until 1831 when the building was sold to the Society of Mechanics and Tradesmen who desired it for a school which they maintained.

The previous discussion has shown the enthusiastic belief in the value of the monitorial system which prevailed among political leaders, scientists, and professional educators. Certain factors in the social situation which justified such enthusiasm may now be examined. Two of these are especially important, first, the lack of public support for free schools, especially in the Middle Atlantic states, and second, the growth of cities and the resulting concentration of ignorance, vagrancy, pauperism, vice, and crime.

[4] *Memoir of John Griscom*, LL.D. (New York, 1859), p. 202.

1. The lack of public provision for free schools was almost universal in the Middle Atlantic states, while in New England, where the early Puritan spirit had provided laws which required schools to be maintained, the actual practice in many places at the beginning of the nineteenth century was to have a very inferior school for only a few months out of the year. In Boston only private tuition schools existed to teach children to read. Yet children had to be able to read before they were admitted to the public writing or grammar schools. As a consequence hundreds of children of poor parents grew up in ignorance. Not until 1818 were public primary schools established in Boston.

In New York City up to 1806 there existed only private and parochial tuition schools and a few private charity schools. In 1806 was opened the first school of the Free School Society, a private corporation which soon maintained free charity schools on a large scale. There was no local public Board of Education in New York City until 1842, although moneys for the support of schools were received from the State Common School Fund from 1815, and from local tax beginning 1829. In Pennsylvania there were no public free schools except "pauper schools" until 1834. Similar conditions existed in the other Middle Atlantic states.

As late as 1840 in New York City, even with the facilities provided by the (Free) Public School Society, only 60 per cent. of the children of school age were under instruction; and in Brooklyn only 30 per cent., the commissioners of common schools of that city attributing the inferiority to the district system which prevailed there. In Williamsburg only 14 per cent. were under instruction. The cost of instructing a child in New York about 1840 was $2.70 a year. In Brooklyn the cost was a little over $3.00. During the life of the New York Public School Society (1805–54) the annual cost of instruction per child seldom exceeded $5.00, varying from $1.37 in 1822 to $5.83 in 1852.[5]

If these figures are compared with the amounts spent today for free public instruction we can realize the change that has

[5] Bourne, *op. cit.*, p. 509 (xxxii).

taken place. The median annual cost per child for elementary schooling in 1902–3 in some fifty cities in the North Atlantic states was found by Strayer to be $28.50, one city spending as much as $55.00.[6]

The only kind of instruction that could be hoped for in free schools in the first part of the nineteenth century was *cheap* instruction. The Lancasterian system provided such instruction. This, no doubt, was the chief social reason for its adoption, but it must not be forgotten that contemporary evidence indicated that its *effectiveness* in training the large groups of children which it was desirable to handle in city districts, made it superior to the methods of instruction commonly pursued.

2. The second social factor which bore an important relation to the adoption of the Lancasterian system, was the growth of cities. In 1800 there were in the United States 6 cities having a population of over 8,000; in 1810 there were 11; in 1820, 13; and in 1830, 26. The population of the six largest cities in 1800 is shown below.[7]

Philadelphia	69,403	Boston	24,937
New York	60,489	Charleston	20,473
Baltimore	26,114	Salem	9,457

In these cities existed concentrated ignorance, vagrancy, pauperism, vice, and crime. Public-spirited citizens who were concerned about the degraded social condition of the lower classes in the cities, organized societies to study and improve it. Thus in New York City there was organizd in 1817 the Society for the Prevention of Pauperism. This society undertook the establishment of a savings bank, an apprentices' library, and other enterprises. Defects in the penitentiary system were attacked, especially the confining of vagrant children with hardened criminals. A private subscription of $17,000 was raised for the estab'ishment of a House of Refuge for Juvenile Delinquents, which was opened in 1825.

The same peculiar social problems of city life were uppermost in the minds of the citizens who established free schools on

[6] G. D. Strayer, *City School Expenditures* (Teachers College, 1906).

[7] A. F. Weber, *Growth of Cities in the Nineteenth Century*, p. 21.

the Lancasterian basis. This fact was expressed by De Witt Clinton in the same speech from which was quoted his eulogy of Lancaster.

> A number of benevolent citizens had seen, with concern, the increasing vices of the city, arising, in a great degree, from the neglected education of the poor. Great cities are, at all times, the nurseries and hotbeds of crimes. Bad men from all quarters repair to them, in order to obtain the benefit of concealment, and to enjoy in a superior degree the advantages of rapine and fraud. . . . . The mendicant parent bequeaths his squalid poverty to his offspring, and the hardened thief transmits a legacy of infamy to his unfortunate and depraved descendants. . . . . In this state of turpitude and idleness, leading lives of roving mendicancy and petty depredation [these children existed] a burden and disgrace to the community.[8]

A similar situation confronted the leaders of the movement for the establishment of free primary schools in Boston (1818).

> These gent'emen had long been united in forwarding various projects for the amelioration and improvement of the condition of the poor. It was mainly through their exertions that the "Provident Institution for Savings" had been put into operation, and its success had encouraged them to further efforts in the same direction.[9]

The several points that have been discussed thus far, namely, the enthusiasm for the Lancasterian system, the lack of provision for free public instruction, and the concentrated ignorance and depravity existing in the growing cities, may be studied to advantage in connection with the development of public schools in Pennsylvania. The state constitution adopted in 1790 contained this provision: "The legislature shall, as soon as conveniently may be, provide by law for the establishment of schools throughout the state, in such manner that the poor may be taught gratis."

For many years the legislature did nothing more than seek to aid churches and private schools to provide free education for the poor. There was no law for this purpose, even, until 1802, and it merely provided that the tuition of poor children attending a school in any neighborhood should be paid by the overseers

[8] Bourne, *op. cit.*, p. 17.

[9] Wightman, *Annals of the Boston Primary School Committee*, p. 18.

of the poor from the public fund. The law compelled parents to declare their poverty, in other words, to pauperize themselves, and in a slightly modified form was the only general provision for free education in Pennsylvania, down to 1834, when the state established a free public school system for all children.

A special law of 1818 established Philadelphia as the "First School District of Pennsylvania," and authorized the district to maintain free public schools for "indigent orphan children or children of indigent parents." These were "pauper schools" but were organized under the control of a public Board of Controllers. The law required these schools to use Lancaster's methods in their most approved state. "Philadelphia had no free schools open to the children of the rich and poor alike, until after the law of 1818 had been amended, in 1836, so as to admit all children without distinction."[10]

Previous to this public provision for educating poor children in Philadelphia, philanthropic individuals and societies had been active in the same cause. Thus in 1799, three young men opened a night school for poor children, and two years later organized "The Philadelphia Society for the Establishment and Support of Charity Schools." In 1807, another similar association was formed which opened schools for boys and girls on the Lancasterian plan.

The law of 1818 which provided for the establishment of free public "pauper schools" in Philadelphia was the result of the activities of a "Society for the Promotion of Public Economy," which was organized to relieve the distress among the poor during the winter of 1816–17. One of the committees of the society was on public schools. It investigated the possibilities of the Lancasterian system and framed the law which the legislature was induced to pass.

The close connection existing between this early movement to establish free schools in Pennsylvania and the use of the Lancasterian system is suggested in this paragraph by Wickersham.

> The special acts relating to education in Philadelphia and in the counties above mentioned, were prompted by a new plan of school man-

[10] Wickersham, *History of Education in Pennsylvania*, p. 287.

agement, called Lancasterian, after its author, Joseph Lancaster, which began to take root in Pennsylvania about 1809. Schools conducted on this plan were established at Philadelphia, Lancaster, Columbia, Harrisburg, Pittsburg, Milton, Erie, New Castle, Greencastle and perhaps at a few other places.[11]

The economy of this system which appealed to legislators who were not willing to appropriate money for the elementary education of any but pauper children may be judged from the ratio of teachers to pupils. In Philadelphia in 1819, there were 10 public Lancasterian schools, with 10 teachers and 2,845 pupils, or one teacher for 284 pupils; in 1834, 20 schools, 31 teachers and 6,767 pupils, or one teacher for 218 pupils.

The important service of the Lancasterian schools in Philadelphia is stated by Wickersham in these words:

> The Lancasterian schools served the good purpose of hastening the adoption of the free school system, by gradually preparing the way for the heavy taxation the support of such a system necessarily incurs. They did more; they awakened thought and provoked discussion on the question of education in all its aspects, the result of which was a more enlightened public sentiment on the subject. In addition, to the Lancasterian system Philadelphia and Pennsylvania are deeply indebted for another thing. It brought with it the idea of the necessity of trained teachers, and this idea outlived the system of which it was a part, and became permanently incorporated into the educational policy of the city and the state. The establishment of a Model School for the preparation of teachers was provided for in the law of 1818, and as a school of this kind it was the first established in the country. In 1821 this school was attended by five hundred and sixty-four pupils, and teachers were prepared therein not only for the schools of the city, but to some extent for those in other parts of the state.

It is evident from the preceding discussion that the social situation in American cities at the beginning of the nineteenth century justifies and explains the enthusiastic belief which prevailed in the usefulness of the Lancasterian system. The two characteristics of the system upon which this belief was based were its cheapness and its effectiveness in handling large groups of children. It was cheap because it employed monitors. It was

[11] Wickersham, *op. cit.*, p. 270.

[12] *Ibid.*, p. 289.

effective because it embodied the results of a careful study of every detail of classroom management and the reduction of these details to an exact system.

Effective "school keeping" involves two types of problems or factors which Bagley has distinguished as the "routine factors" and the "judgment factors." The routine factors are defined as those measures which aim to build up a number of specific habits in the various individuals of the group and to organize a system that will take care of the mechanical details. The judgment factors concern the variables which it is necessary to consider, the constant readjustments which a teacher has to make in the interests of the individuals constituting the group.

The history of education has been written largely from the standpoint of the second type of teaching problems, as if the whole problem of effective teaching consisted in such complete provision for individuality as Rousseau advocated in the Émile. This point of view would seem to imply that the handling of children in a group is simply a concession to financial necessity and that the tutorial education advocated by the educational reformers to whom so much space is usually given, namely Rabelais, Montaigne, Locke and Rousseau, is the best realization of the aim of education. To those who hold this view, any teaching process that includes elements similar to military drill is non-educative.

In opposition to this interpretation, it may be maintained that both types of training are essentially educative, that the routine elements in school work have a positive, permanent value for the individual as well as the "judgment" factors, that each needs to be provided and that it is better to have the first without the second than to have neither, that effective military drill is better than a loose, lazy, idle, passive, inattentive, slipshod existence which encourages the formation of many bad negative habits, and few good positive habits.

The prevailing "school keeping" at the beginning of the nineteenth century was of this latter type. It was not effective either from the standpoint of routine or educative individual attention. It was predominantly country "school keeping," and

the methods of the country school had been adopted in the city schools which were usually small and in charge of a single teacher. That is, instead of taking advantage of the possibility of forming a number of large schools with several teachers in different rooms having charge of children of the same age, many small one-room schools were located in different parts of the towns. The "country-school" or district-school methods employed in these schools were described in the first paper. The teaching was such that a child "had the privilege of forty minutes' worth of teaching and three hundred and twenty minutes' worth of sitting still," the master's time being all consumed with hearing individuals recite their lessons, making pens, setting copies, and keeping order. The systematic grading of schools was practically unknown at the beginning of the century.

Even in the well-organized public primary schools of Boston, which merely taught the elements of reading, writing, and spelling, there were in 1820 four classes in each school all under one teacher.[13] In New York City as late as 1829, out of a total of 24,952 children attending school, 15,320 were in 430 private schools which employed 432 principal teachers and 259 assistants. This averaged 1 to 2 teachers and 33 pupils per school.[14] We read of "a handsome two-story brick building erected in 1792" in Boston, in which "in one apartment Writing and Arithmetic is taught; in another, Spelling, Reading, English Grammar and Geography." Other schools described were of either one or two rooms.[15] I have read of a four-room school building erected at this time in which a teacher in each room conducted a school on the district plan having children of all ages and using the method of individual recitation.

Thus we see that the mechanics of school keeping, the routine factors in school management, were given little consideration and as a consequence an enormous amount of waste existed. There was just as little consideration of the judgment factors, that is of provision for educative individual attention. Improve-

[13] Wightman, *op. cit.*, p. 58.

[14] Bourne, *op. cit.*, p. 121.

[15] Wightman, *op. cit.*, p. 8.

ment along this line was not affected until the influence of Pestalozzian methods was felt, to a limited extent in the second quarter of the century, but not to any considerable degree until the Oswego movement in 1860. Improvement in the routine factors of teaching began much earlier and received its chief impulse from the Lancasterian system.

The Lancasterian system marked an advance over contemporary practice in the following respects:

1. In making a careful and complete study of classroom management and of the mechanics of instruction. This has been a prominent element in the work of most successful educational institutions and systems, and the schools of Lancaster would be classed with those of John Sturm, the Jesuits, and the Brethren of the Christian Schools which were acknowledged in their day to be the most effective schools in existence.

2. Just as economy was a fundamental element in the financial organization, so it was in the school routine. While the routine of passing of classes, taking attendance, changing work, etc., was organized so as to consume a minimum of time, the teaching was so organized as to keep all the pupils employed all the time. It is said that Lancaster invented the mottoes, "A place for everything and everything in its place" and "Let every child at every moment have something to do and a motive for doing it."

3. Special attention was devoted in the construction of the schoolroom to lighting, ventilation, slant of floor, seating, elimination of noise, etc. Great ingenuity was shown in devising apparatus that would assist in teaching, such as sand tables for writing, blackboards, reading charts, etc.

4. Children were carefully classified according to attainments into larger or smaller groups, and in some cases a child could recite with one group in arithmetic and another group in reading or spelling.

5. Studying and learning were made active social processes rather than passive individual processes. A child was always studying or working or reciting as a member of a group, producing some objective result to which the monitor or the rest of

the class gave attention. Emulation was the chief social instinct stimulated, as was the case with the Jesuits and parallel results were secured. There was much marching back and forth and alternation of seat work and standing recitations.

6. Teachers were carefully selected and trained, and they undertook teaching as a permanent career. For their guidance manuals of instruction were prepared giving detailed directions for school keeping, another parallel to the efficient schools of the Jesuits and of the Brethren of the Christian Schools.

EDITORIAL NOTES

Private Gifts to Public Schools

The announcement that Mr. Carnegie has decided to give three million dollars for the purpose of improving the schools of ten cities raises the very interesting general question of the advantage and methods of using private benefactions for institutions which have heretofore been regarded as very exclusively public in character. It has been a common experience in American education for private benefaction to establish and maintain higher institutions of learning, but we have regarded the public school as an enterprise to be maintained wholly through public funds. It has frequently been suggested that the endowment of public schools might improve the character of these institutions, but the problem of administering such private endowments has not often arisen in any concrete form.

Experience of the City of Indianapolis

There is one interesting case of such private benefaction left to a city school system in the Gregg Legacy, which places in the hands of the Board of Education of the city of Indianapolis a very considerable sum of money to be used annually in the training of teachers. This fund has been expended in sending teachers of the Indianapolis school system away for purposes of advanced study. In some cases a teacher has been sent to Europe or one of the higher institutions for a whole year. In other cases the period of study provided has been much shorter, covering a summer school or a single term of study in some educational institution. Those who have observed the working of this plan in Indianapolis are very enthusiastic about its effect on the teaching corps. The possibility of further study acts as an incentive to the teachers to maintain a higher grade of regular work. Furthermore, the advantages gained through the period of study are brought back to the school system in the form of reports and classes, which can be led during the winter by those who have had the ad-

vantage of study, and in increased efficiency on the part of those who have enjoyed the benefits of the fund.

Administration by Public Officials

The administration of this Indianapolis fund has been relatively simple because the fund has been in the hands of the regular offices of the school system. Whatever the superintendent of schools considered to be advantageous for the system as a whole cou'd be fostered through the use of this fund. It is by no means as easy to see how an outside committee of administrators could improve a school system which was not prepared in its own organization to administer such a fund. The outside board or committee would find it extremely difficult to form an adequate opinion of the efficiency of teachers and to distribute the funds to them in anything like an adequate fashion.

Could Such Funds Be Used for Pupils?

Improvement of the teachers suggests itself as the first avenue for the expenditure of such a private benefaction to the public schools. Other types of activity, however, can be suggested especially with reference to the pupils in the schools. There are many pupils who are said to leave school because of the economic demands made by the family that the younger members of the household contribute to the family support. It would be an extremely interesting task for a committee supplied with private funds to inquire into the cases of such students and, where they were found at all worthy, to pay a part or the whole of the income which they would gain from leaving school and entering the factories. We should then have a definite experiment which would help us to solve the vexed question of whether our public life is losing through these early withdrawals from the school.

Mr. Staples' Conclusion

Mr. Staples was able to show, in an article in the February number of the Elementary School Teacher, a very close relation between income in later life and the period of one's schooling. A small investment from a private fund might raise the efficiency of a great number of children to a point where the community would profit in later generations by this investment in pupils as much as by an investment in the teachers themselves.

Growing Unity of Educational Interests

One of the very impressive features of the recent meeting of the Department of Superintendence of the National Education Association was the variety of interests that were represented at this meeting. We frequently make the remark that our school system is becoming more and more of a unit. Colleges see their relation to the problem of elementary school work. The normal school and the college are approaching each other in the type of work which they undertake, and the high school, standing between the elementary school and the upper schools, constitutes a link of the most intimate sort in the chain of educational succession. Certainly this remark with regard to the unity of our school system was justified in the various lines of activity represented at the recent meeting of the superintendents. College teachers of education were present at this meeting and held important sessions. There were societies for the study of physical education dealing with problems that related to all grades of schools. Papers on the major programmes dealt not only with instruction in the common schools but also with the relation of such instruction to all types of institutions and to all types of specialized work.

This concrete exhibition of the unity of our educational system is a very welcome indication of the advance that has been made in recent years in bringing together all kinds of teachers. The time was when there were no college teachers of education and no organizations that would have brought together those interested in higher education and those interested in the elementary schools. That period of separation is past and whatever can be contributed in the way of scientific studies or by way of efforts toward a unified course of studies throughout the schools, is now recognized as a legitimate part of institutional work of all grades.

BOOK REVIEWS

Genetic Psychology: an Introduction to an Objective and Genetic View of Intelligence. By E. A. KIRKPATRICK. New York: Macmillan, 1909. Pp. xv+373.

The author takes for the subject of his treatment the development of mind in its broadest sense and from the various points of view from which it may be regarded—animal evolution, the racial and the individual development of man. Since our knowledge of the mental life of animals is an inference from their structure and behavior, the first half of the book is taken up with the discussion of these matters. The latter half of the book deals in general with consciousness and its development. The method of treatment then is first to describe the development of physiological and nervous structure, then of behavior, and finally the mental activity corresponding to this development.

After a brief chapter on the development of the sense organs and motor apparatus there follows a detailed description of the behavior of all grades of animals from the single-celled amoeba to the highest vertebrates, as it has been determined by experimental investigation. This discussion is, in the opinion of the reviewer, much too detailed and is not written in such a way as to make prominent the manner in which animal behavior develops. The mind of the general reader will be left with a mass of unrelated details. The developing behavior might also be more closely correlated with the development of the nervous system.

The treatment of behavior concludes with two chapters on the instincts and the development of behavior in the individual—"the acquisition of habits and ideas." In the consideration of ideas the author of course abandons the objective treatment. There is a later chapter on types of learning which treats of essentially the same subject—the development of the individual—and it would seem that these could better be brought into closer relation with each other.

Following a chapter on the criteria and general characteristics of consciousness comes the most convincing and illuminating part of the book, a chapter drawing a comparison between the mental life of man and of animals. The mental life of animals is shown to be comparable in general not to our clearly analyzed ideas or perceptions but to our undifferentiated, purely practical mental reactions to our surroundings. The human endowments of imagery and conceptual thought, together with their vehicle, language, are the means of developing the typically human consciousness out of the infant consciousness which starts on the level of the animal. The lower processes are then transformed by this higher development.

The various grades of conscious process, sensory, perceptual, conceptual, etc., are worked over again in the next chapter from the point of view of their function in adaptation to the environment instead of from the descriptive point of view. There are also added to conscious adaptation the physiological pro-

cesses as lower forms of "intelligence." This classification together of physiological and conscious processes as "intelligence" seems to the reviewer unnecessarily to neglect the differences between them and to rest in many cases on mere analogy, as when the acquirement of immunity to disease is compared with learning.

The chapter on learning is divided according to a similar classification to those just mentioned into physiological, sensory-motor, representative, conceptional and combination learning. Under the last head is discussed the learning activity in some of the school subjects, as writing and reading.

In general, the reader feels that the book is more satisfactory in its detailed treatment than in its general organization. The same material is treated in different places from slightly different points of view and this is confusing. In many places also the general lines of development might be brought out more clearly instead of treating the facts in isolated groups and allowing the reader to trace the course of development, as in the chapter on "Types of Animal Behavior."

The student of education, however, will find much in the book that is valuable. It enforces the general point of view of mental life as a development and traces the course of the development in detail. The author gives evidence of a wide acquaintance with the facts and gives a comprehensive list of sources at the end of each chapter.

F. N. Freeman

The University of Chicago

The Ninth Yearbook of the National Society for the Study of Education: Health and Education. By Thomas Denison Wood, A.M., M.D. Chicago: The University of Chicago Press, 1910. Pp. 108. 75 cents net.

This volume gives, in the compass of 108 pages, a comprehensive and systematic statement of the various lines of activity which the school may undertake in order to improve the physiological condition of pupils and to build up, through physical exercise, strong, healthy bodies.

After a brief introduction, the first section of the book gives an account of the health examinations which should be made when children enter school and during the successive years of their study. The material thus collected at several centers in this country is of very great value in determining the norm or standard of physical health which should be maintained in the schools. Elaborate tables are here presented summarizing the results of such investigations, and blanks are described in detail which should be filled out during the physical examinations. Attention is also directed specifically to the chief physiological defects whch will be observed in children.

The second section is a brief one and deals with the problem of ventilation and cleanliness in the school building. This section is not exhaustive, but it suggests a number of problems to which the teacher's attention should be directed. With the aid of the bibliography, which appears at the end of the book, the section can be made very instructive.

Two sections now follow, one dealing with the hygiene of instruction, where

the problem of fatigue and eye-strain and sleep are discussed, and a section on health instruction in which a plan is outlined for teaching the children personal hygiene. This part of the book might have been elaborated to very great advantage, as the ordinary teacher undoubtedly finds it very difficult to select the problems which can be taken up appropriately in a course in hygiene.

A final section on physical education gives in detail the various exercises which can properly be used with school children. A number of games are also mentioned and an appropriate sequence of these games is suggested.

Taken as a whole, the volume will be very useful in calling attention to the various aspects of physical health in the school. The whole topic is one which is receiving great attention at the hands of teachers, and anything which opens up the field in such a comprehensive way will be welcome. The book would make a very valuable introduction for teachers' meetings on the subject of physical health.

C. H. J.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

ALEXANDER, JOHN W. The need of a National Academy and its value to the growth of art in America. Craftsman. 17:607–18. (Mr. '10.)

BARTON, WILLIAM E. The library as a minister in the field of religious art. Relig. Educa. 4:594–603. (Fe. '10.)

BURSTALL, SARA A. Independent study in schools. School W. 12:44–46. (Fe. '10.)

BUTLER, NATHANIEL. The teacher as a constructive force. Relig. Educa. 4:550–60. (Fe. '10.)

(The) confessions of a teacher (I). Journ. of Educa. (Bost.) 71:201–3. (24 Fe. '10.)

COPE, HENRY F. Textbooks on morals and ethics. Relig. Educa. 4:575–81. (Fe. '10.)

DIXSON, ZELLA A. The share of the library in religious education. Relig. Educa. 4:588–93. (Fe. '10.)

(The) educational value of the camera. Craftsman. 17:647–56. (Mr. '10.)

FAUNCE, WILLIAM H. P. Church and religious education. Relig. Educa. 4:527–30. (Fe. '10.)

HEFFRON, JOHN L. The moral value of the teaching of the physiology and hygiene of sex in the public schools. Relig. Educa. 4:543–49. (Fe. '10.)

HODGE, RICHARD M. Time-relations of church and school. Relig. Educa. 4:568–72. (Fe. '10.)

HRBEK, SARKA. The library and the foreign-born citizen. Pub. Lib. 15: 98–104. (Mr. '10.)

HUGHES, JAMES L. Definite tests for the moral efficiency of state schools. Relig. Educa. 4:561–68. (Fe. '10.)

KNOX, RAYMOND C. Moral and religious training in college associations. Relig. Educa. 4:582–85. (Fe. '10.)

MACLEISH, MARTHA H. The home in religious education. Relig. Educa. 4:572–75. (Fe. '10.)

[1] Abbreviations.—Amer. Educa., American Education; Craftsman, The Craftsman Magazine; Educa. R., Educational Review; Harp. W., Harper's Weekly; Journ. of Educa. (Bost.), Journal of Education (Boston); Psycholog. Clinic, Psychological Clinic; Pub. Lib., Public Libraries; Relig. Educa., Religious Education; School W., School World; South. Educa. R., Southern Educational Review; Teach. Coll. Rec., Teacher's College Record.

MELL, P. H. The college attitude toward the high school. South. Educa. R. 6:17–20. (Ap., My., Je., and Jl. '09.)

MURRAH, W. B. Right views of education. South. Educa. R. 6:1–9. (Ap., My., Je., and Jl. '09.)

O'GRADY, HARDRESS. The teaching of French in the training colleges. School W. 12:49–50. (Fe. '10.)

PRITCHETT, HENRY S. Advertising the colleges. Harp. W. 104:9, 34. (19 Fe. '10.)

RAYLEIGH, PETER. Education in China. Educa. R. 18:30–39. (Fe. '10.)

ROSE, WICKLIFFE. Education as a public business. South. Educa. R. 6: 10–16. (Ap. '09.)

SADLER, M. E. The relation of elementary schools to technical schools, day and evening. School W. 12:41–44. (Fe. '10.)

SCHLEGEL, GEORGE S. The Reading free dental dispensary. Psycholog. Clinic. 3:249–54. (15 Fe. '10.)

SEIPMANN, OTTO. Education in England and abroad. School W. 12:50–53. (Fe. '10.)

SNEDDEN, DAVID. The movement for vocational education and its probable effects on liberal education (I). Amer. Educa. 13:252–55. (Fe. '10.)

WILSON, LOUIS N. The library and the teaching profession. Pub. Lib. 15:93–98. (Mr. '10.)

WINSHIP, A. E. Vocational training in the public schools; what are the real causes of the present movement? Journ. of Educa. (Bost.) 71: 143. (10 Fe. '10.)

WITMER, LIGHTNER. The restoration of children of the slums. Psycholog. Clinic. 3:266–80. (15 Fe. '10.)

WOODHULL, JOHN F. The teaching of physical science. Teach. Coll. Rec. 11:1–82. (Ja. '10.)